

# Weigh To Have Fun

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**Reporting Category** Measurement

**Topic** Comparing weight/mass of two objects

## Materials

- Balance scales
- One apple and one orange
- Student journals or recording sheets
- Various manipulatives for measuring weight (e.g., paper clips, plastic bears, cubes, bean counters)
- Various objects to weigh
- Pencils

## Vocabulary

*heavier, lighter, the same as, balance, balance scale, estimate, more, less, equivalent, weight/mass, compare*

## Student/Teacher Actions (what students and teachers should be doing to facilitate learning)

1. Explain to students that today they will explore measuring weight/mass. Review the terms *more, less, and equivalent*. Review how to use a balance scale, if needed.
2. Hold up the apple and the orange in front of the students, ask them to predict which will weigh more, and have them record their predictions in their journals. Ask how they could determine whether their prediction is right (by weighing each object). Have them predict and record in their journals how many manipulatives (e.g., plastic bears) it would take to balance the apple, and how many it would take to balance the orange. Have students share and discuss their predictions.
3. Have a student come up and weigh the apple, counting the number of bears it takes to balance it on the scale. Have students record the weight in their journals and compare their estimate to the actual weight. At this point, allow students to adjust their estimation of the number of bears it will take to balance the orange, if they wish. Be sure to discuss the reasons they might want to change their estimates, explaining how and why the actual weight of the apple might affect their estimates of the weight of the orange.
4. Repeat the weighing procedure with another student and the orange. Have students compare the weights of the apple and the orange and discuss their findings. Were there any surprises? Have them write in their journals which weighed more and which weighed less, stressing use of the target vocabulary.

5. Tell students they will now work in pairs to compare the weights of two more objects, using the same procedure. After answering any questions, give each pair a balance scale, two different objects to be estimated, weighed, and compared, and some nonstandard units of measure for measuring weight. As students work, circulate to check for understanding, questions, and proper use of materials. When students have finished measuring and comparing, engage them in a dialogue about their observations, estimations, and results. Students should describe and record their investigations in their journals, using the terms *more*, *less*, or *equivalent*.
6. After the hands-on activity, have a math talk in which students may share their results with each other, noting any similarities and differences.

### **Assessment**

- **Questions**
  - “Which object weighed more? Less? How do you know? Which objects weighed close to one another? Were the weights of any objects equivalent?”
  - “How many more (bears) would the first object have to weigh to be equivalent to the second object? How do you know?”
  - “Would the objects you weighed weigh the same if you used a different manipulative? Why, or why not?”
- **Journal/Writing Prompts**
  - “Write and/or draw about your findings, using the terms *more*, *less*, and/or *equivalent*.”
  - “Ask two different friends about their experiments and their results. Write about the objects they weighed, and describe their results, using the terms *more*, *less*, and/or *equivalent*.”
- **Other**
  - Circulate around the room during the lesson to observe students and engage them in conversation about their explorations. Use questioning strategies that probe their understanding of the concept.

### **Extensions and Connections (for all students)**

- Allow students additional opportunities to practice estimation and measurement skills by setting up your math center with balance scales, recording sheets, and a variety of objects to compare and measure.
- In your math center, provide three or more objects for students to measure. First, have them predict what the order of the objects will be when ordered from lightest to heaviest. Then, have them weigh the objects and record the results in their math journals, comparing the results with their predictions.

### **Strategies for Differentiation**

- Place students in small groups to offer support for one another.
- Allow students who have difficulty writing to dictate their responses to the teacher.
- Provide a sentence frame such as, “The \_\_\_\_\_ is heavier/lighter than the \_\_\_\_.”